quality to those found in the United States. There are certain notable exceptions, however, as the pili nut (*Canarium luzonicum*), which is abundant and superior to the almond in quality, and the wild mango (*Mangifera caesia*), with its delicious flavor. Nuts, seeds, fleshy fruits, buds, leaves, roots, and tubers are included in the list, and the drawings and photographs used to represent them are of excellent quality.

A companion report by WEST and BROWN[17] deals with native resins and oil-producing plants, which are rather numerous. One difficulty in the utilization of the resins of many of the trees is to be found in the large number of species found in any particular area, making the number of individuals of any one species in any locality rather small. Several of the oil-producing plants give promise of good results under cultivation. In this report, also, the illustrations and descriptions give much botanical information.—GEO. D. FULLER.

Ecological research.—In his report of the work of the Carnegie Institution for 1920, Director MACDOUGAL[18] indicates the lines of research being followed by various members of his staff, and affords hints of results being attained. He has been measuring in detail the growth of certain trees and the accumulation of food material by the potato. CANNON and FREE have continued their investigations of the growth of roots as related to aeration. The factors affecting plants in new habitats have been under investigation by MACDOUGAL, and his results seem to show that species may be the more readily transferred from cool regions to warm, from montane regions to maritime, and from regions of climatic extremes to those of equable climates than the reverse. SHREVE reports progress in a soil temperature survey of the United States and Canada, in his investigations of the arid Avea Valley, and in his explorations of the Santa Lucia Mountains. Mrs. SHREVE has studied seasonal changes in the transpiration of *Encelia farinosa*, and VINSON and GRIFFIN have investigated the changing composition of Salton Sea water. The strand vegetation near Monterey, California, has been examined by COOPER, and stations and quadrats established for more exact studies of the associations and their controlling factors. Evaporation rates on the Monterey peninsula are decidedly less than in the oak and chaparral region east of Monterey, and this may account for the pine forests covering the former area.—GEO. D. FULLER.

Calcicoles.—In a discussion of plants found on soils supposed to be calcareous, SALISBURY[19] makes it clear that the problem of the limitation of the

---

[17] WEST, A. P., and BROWN, W. H., Philippine resins, gums, seed oils, and essential oils. Phil. Dept. Agric. and Nat. Res., Bur. For. Bull. **20**: 1–230. *figs.* 73. 1920.

[18] MACDOUGAL, D. T., Department of botanical research. Carn. Inst. Wash. Year Book for 1920. **19**: 49–81. 1921.

[19] SALISBURY, E. J., The significance of the calcicolous habit. Jour. Ecol. **8**: 202–215. 1920.